

4. (Amended) The assembly of claim 1, wherein said pyrotechnic ignition element includes an output can having a flared bottom that is enclosed within said initiator body.

5. (Amended) The assembly of claim 1, wherein said pyrotechnic ignition element includes an insulator cup having a flared bottom that is enclosed within said initiator body.

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6. (Amended) The assembly of claim 4, wherein said pyrotechnic ignition element includes an insulator cup having a flared bottom that is enclosed within said initiator body.

7. (Amended) The assembly of claim 2, wherein said pyrotechnic ignition element includes an output can having a flared bottom that is enclosed within said initiator body.

8. (Amended) The assembly of claim 2, wherein said pyrotechnic ignition element includes an insulator cup having a flared bottom that is enclosed within said initiator body.

10. (Amended) The assembly of claim 1, wherein the overall axial length of said automotive pyrotechnic initiator assembly is less than 22 millimeters.

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11. (Amended) A mating connector for use with an automotive pyrotechnic initiator assembly having enclosed on-board circuitry and an initiator electrical interface, said mating connector comprising:

- a) a mating connector body;
- b) an enlarged initiator opening defined in said mating connector body and including a generally cylindrical wall formed to receive a portion of the automotive pyrotechnic initiator assembly that contains enclosed on-board circuitry; and
- c) a bus wire connected to said mating connector body and including a bus wire electrical interface disposed within said generally cylindrical wall of said enlarged initiator opening, said bus wire electrical interface formed to mate with said initiator electrical interface.

12. (Amended) The mating connector of claim 11, wherein said enlarged initiator opening includes an engagement feature formed to snugly engage said automotive pyrotechnic initiator assembly within said enlarged initiator opening.

13. (Amended) The mating connector of claim 12, wherein said engagement feature prevents the automotive pyrotechnic initiator assembly from rotating within said enlarged initiator opening.

16. (Amended) The mating connector of claim 15, wherein said bus wire electrical interface is configured to elastically deform when said automotive pyrotechnic initiator assembly is received within said enlarged initiator opening, with the resulting degree of elastic deformation of said bus wire electrical interface being selected to ensure that the automotive pyrotechnic initiator assembly is held snugly within said enlarged initiator opening and to ensure that said initiator electrical interface and bus wire electrical interface are held snugly together in electrical contact.

17. (Amended) An on-board circuitry automotive pyrotechnic initiator and mating connector assembly, comprising:

- a) a pyrotechnic ignition element including two electrode pins;
- b) control circuitry attached to said electrode pins;
- c) an initiator body enclosing said electrode pins and said control circuitry;
- d) an initiator electrical interface attached to said control circuitry, said interface including an exposed portion not enclosed within said initiator body;
- e) a mating connector body including an enlarged initiator opening defined therein, said enlarged initiator opening formed to receive a portion of said initiator body enclosing said control circuitry; and
- f) a bus wire connected to said mating connector body and including a bus wire electrical interface disposed within said enlarged initiator opening, said bus wire electrical interface formed to mate with said initiator electrical interface.

18. (Amended) The assembly of claim 17, wherein the overall axial length of said on-board circuitry automotive pyrotechnic initiator and mating connector assembly is less than 22 millimeters when said initiator body is fully received within said enlarged initiator opening.